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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,579	10/03/2000	Daniel A. Japuntich	48317USA3H.027	7369

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EXAMINER	
LEWIS, AARON J	

ART UNIT	PAPER NUMBER
3743	

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/678,579	JAPUNTICH ET AL.	
	Examiner	Art Unit	
	AARON J. LEWIS	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07/14/2005 (RCE)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33-71* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33-71* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 07/14/2005 has been entered.

Information Disclosure Statement

2. The information disclosure statement filed 07/14/2005 contains a citation of a Court Proceeding listed on a PTO-1449 form. The cited Court Proceeding does not constitute prior art; consequently, the PTO-1449 form does not appear to be a proper vehicle for notifying the PTO of this information. This citation has been drawn through on the PTO-1449 form; however, the copy of these Court Proceedings has been made of record in the file and each is acknowledged as having been filed as Information From Related Litigation as set forth in MPEP 2001.06(c).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 33-53,55,56,63-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. ('516) in view of Soderberg (EP 0 252 890).

As to claim 33, Simpson et al. disclose a filtering face mask that comprises: a mask body (1,2) that is adapted to fit over the nose and mouth of a wearer (fig.1), and an exhalation valve (12) that is attached to the mask body, the exhalation valve comprising: a valve seat that comprises: a seal surface (page 2, lines 37-50 and #19) and an orifice (16) that is circumscribed by the seal surface; a single flexible flap (15) that has a fixed portion (page 2, lines 46-50) and a free portion and first and second opposing ends, the fixed portion of the flap being associated with the fixed portion of the flap so as to remain at rest during an exhalation, and the second end being associated with the free end portion of the flexible flap so as to be lifted away from the seal surface during an exhalation, the second end also being located below the first end when the filtering face mask is worn on a person, the flexible flap being positioned on the valve seat such that the flap is pressed towards the seal surface in an abutting relationship therewith, under any orientation of the valve, when no external forces from the movement of fluid are exerted upon the flap (page 2, lines 39-42), the flexible flap being secured to the valve seat at the fixed portion of the flap at a two securement points, the two securement points being disposed outside a region encompassed by the valve seat orifice (fig.2).

The difference between Simpson et al. and claim 33 is the flexible flap being secured to the valve seat at two securement points.

Soderberg teaches a flexible valve flap (11) being secured to the valve seat at two securement points (5,6 of figs.1 and 3) for the purpose of ensuring a good seal between the valve membrane and the valve seat (page 5, lines 6-10). Soderberg (page 5, line 30-page 6, line 3) also establishes an equivalency between various methods of attachment (e.g. moulding, clamping) of the valve flap to the valve seat.

It would have been obvious to secure the valve flap of Simpson et al. to the valve seat by any well known means including securing by two points because it would have provided a means of attachment that would ensure a good seal between the valve membrane and the valve seat as taught by Soderberg.

As to claims 34 and 35, the particular material from which the valve seat of Simpson et al. is made and the manner of making the valve seat can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular material including plastic material. It is noted that Simpson (page 2, line 39) discloses the valve flap being made from a plastic material. It is submitted that it would have been obvious to make the valve seat from any well known material including a plastic material because it would physically cooperate more effectively with a valve flap of the same material rather than one made from a different material. Further, Soderberg (page 4, lines 14-18) teaches the valve membrane to be compression moulded rubber material.

As to claim 36, the seal (fgs.2 and 3) of Simpson et al. are illustrated as being substantially uniform and since the flexible flap (15) of Simpson et al. is disclosed of being made from plastic and since known physical characteristics of plastics include flexibility and resiliency, it would have been obvious that the flap (15) of Simpson et al.

is made from plastic and is therefore fully capable is "...of allowing the flap to display a bias towards the seal surface.".

As to claim 37, Soderberg (fg.3) illustrates that the two securement points include two pins (15).

As to claims 38,39,42 the flaps (15,14) of Simpson are disclosed as being made from plastic and/or rubber, respectively and the valve flap (11) of Soderberg is disclosed as being made from rubber (page 4, lines 14-18). The physical characteristics of plastics and rubbers include elasticity. Consequently, the particular material from which the valve flaps of Simpson et al. are made can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular elasticity of such a material. It is submitted that the materials from which the valves of Simpson et al. and Soderberg are made would perform as efficiently as the claimed elastomeric rubber materials.

As to claims 40 and 41, the degree of a seal between the valve flap and valve seat sealing surface of Simpson et al. as modified by Soderberg can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular degree of seal including one meeting the standards as set forth in 30 C.F.R. 1 1.183-2, July 01, 1991. Soderberg expressly teaches ensuring a good seal between the valve membrane and valve seat (page 5, lines 6-10) and discloses the valve membrane sealing against the valve seat irrespective of the postion assumed by the valve device (page 4, lines 13-23). Further, it stands to reason that one ordinary skill in the art would

strive to make a face mask in accordance with at least minimum current government standards of operation.

As to claims 43-46,48,49, the particular dimensions, the particular material including the hardness of the material of the flexible flap (15,14) of Simpson et al. can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular dimensions nor in any particular constituency. It is submitted that the particular dimensions, material and hardness of the valve membrane of Simpson et al. as modified by Soderberg would perform as efficiently as the claimed valve material.

As to claim 47, the one free portion of the flexible flap of Simpson et al. as modified by Soderberg has a profile that comprises a curve when view from the front (figs. 1 of Simpson et al. and figs.1-3 of Soderberg), which curve is cut to correspond to the general shape of the seal surface.

As to claim 50, while Simpson et al. as modified by Soderberg is silent as to the relative surface areas of the fixed and free portions of flap (15), it is submitted that the particular relative amounts of the fixed and free portions can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular relative amounts. It is submitted that the surface areas of the fixed and free portions of the valve membrane of Simpson et al. as modified by Soderberg would be sufficient to perform as efficiently as the claimed valve material.

As to claim 51, the flange against which the valve flap is secured in Simpson et al. (5g.2) is illustrated as being the same 360 degrees around the valve seat.

As to claim 52, given the downward orientation of the mask body (1,2) of Simpson et al. fig.1 and given that any exhaled air must pass outward between the valve flap (15) and the body the of mask, it stands to reason that exhaled air will follow a path which is generally parallel to the upper surface of the body of the mask which itself is downwardly oriented as illustrated in fig.1. Therefore, exhaled air is deflected downwardly during use of the mask of Simpson et al..

As to claim 53, the valve seat of Simpson et al. as modified by Soderberg comprises a flap-retraining surface (15 of Soderberg), the two securement points being located at the flap retaining surface (fig.3 of Soderberg).

As to claim 55, while Simpson et al. do not address the particular volume of a wearer's exhalation exiting the exhalation valve (12), it is submitted that since the exhalation valve (12) is expressly disclosed as opening in response to a wearer's exhalation, it would have been obvious that the valve would remain opened as long as a wearer is exhaling which would enable most if not all of the volume including 60% of gas exhaled by a wearer to pass through valve 12 of Simpson et al..

As to claim 56, since the mask body (1,2) of Simpson et al. is angled downwardly when positioned on wearer's face, the valve (fig.2) mounted in cantilever fashion on mask body (1,2) of Simpson et al. is positioned substantially opposite a wearer's mouth (fg.1).

As to claim 63, Simpson et al. as modified by Soderberg as discussed above with respect to claim 33, also teach the flexible flap being positioned on the valve seat such that the flap is pressed towards the seal surface in an abutting relationship therewith

when a fluid is not passing through the orifice (page 2, lines 39-42 of Simpson et al. which expressly discloses that the valve flap (13) of fig. 2 is arranged to cover the orifice during inhalation). Inhaled air enters the interior of the mask (fig.1) through the filter material of the body of the mask and exhaled air exits the interior of the mask of Simpson et al. via the exhalation valve (fig.2). Simpson et al. disclose the use of the mask in environments which have noxious fumes present; consequently, given the manner of operation of the filtering mask and exhalation valve, in order for it to protect a wearer from noxious fumes, it stands to reason that the exhalation valve remains closed in all physical orientations (i.e. the exhalation valve body is pressed towards the seal surface in an abutting relationship when (during inhalation) fluid is not passing through the orifice (16)) except during user exhalation. Otherwise, resort is had to Soderberg (figs.1-3 and page 4, lines 16-21) which teach a valve which is pressed towards the seal surface in abutting relationship therewith under any orientation of the valve when no external forces from the movement of fluid are exerted upon the flap.

As to claims 64 and 65, the particular material from which the valve seat of Simpson et al. is made and the manner of making the valve seat can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular material nor in the manner of making the seat. It is noted that Simpson et al. (page 2, line 39) discloses that the valve flap being made from a plastic material. It is submitted that it would have been obvious to make the valve seat from any well known material including plastic by any well known method including injection molding because it (the valve seat) would physically cooperate more effectively with a valve flap of the same

material than one made from a different material. Further, Soderberg (page 4, lines 14-18) teaches the valve membrane to be compression moulded rubber material.

As to claims 66-69, Soderberg (fig.3) teaches a valve seat which includes a planar flap retaining surface that has two securement points (15) associated therewith, the flap retaining surface is illustrated as being planar (fig.3) and also being positioned on the valve seat to allow the flap to be pressed in an abutting relationship to the seal surface when fluid is not passing through the orifice (page 4, lines 14-18 and page 5, lines 6-10).

As to claim 70, the valve seat of Simpson et al. as modified by Soderberg teaches a valve seat including a seal ridge (#3 of Soderberg and page 4, lines 17-21), onto which a seal surface is disposed, and a flap retaining surface (5,6 of Soderberg), onto which the two securement points (15 of Soderberg) are located, the flap retaining surface being positioned on the valve seat to allow the flap to be pressed in an abutting relationship to the seal surface when a fluid is not passing through the valve (page 4, lines 17-23 and page 5, lines 6-10).

As to claim 71, the two securement points of Simpson et al. as modified by Soderberg (15 of Soderberg fig.3) are located outside a region encompassed by the orifice #16 of Simpson et al..

5. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. ('516) in view of Soderberg (EP 0 252 890) as applied to claims 33-53,55,56,63-71 above, and further in view of Cover ('183).

The difference between Simpson et al. as modified by Soderberg and claim 54 is the flexible flap exhibiting a curvature when resting on the seal surface and viewed in cross-section from the side.

Cover (page 2, col.1, lines 3-6, lines 15-17, lines 22-33, lines 48-51) teaches an exhalation valve flap (23) when secured to the valve seat (17) at its fixed portion has a curved profile when viewed from a side elevation (figs.1,2,4) for the purpose of improving the closing action of the valve flap, improving the retention of the valve flap in effective registration with the apertures of the valve seat and causing the valve flap to function more efficiently.

It would have been obvious to modify the shape of the valve seat of Simpson et al. to have a curved profile when viewed from a side elevation because it would have improved the closing action of the valve flap, improved the retention of the valve flap in effective registration with the apertures of the valve seat and caused the valve flap to function more efficiently as taught by Cover.

6. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. ('516) in view of Soderberg (EP 0 252 890) as applied to claims 33-53,55,56,63-71 above, and further in view of Warbasse ('706).

The difference between Simpson et al. and claim 57 is a valve cover.

Warbasse teaches a valve cover (11) positioned over an exhalation valve flap (12) for the purpose of protecting the valve flap, controlling the extent of movement of the flap, and controlling the direction of fluid flow exiting the mask via the valve.

It would have been obvious to further modify the mask of Simpson et al. to include a valve cover because it would have provided a means for protecting the valve flap, controlling the extent of movement of the flap, and controlling the direction of fluid flow exiting the mask via the valve as taught by Warbasse.

7. Claims 58-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. ('516) in view of Soderberg (EP 0 252 890) as applied to claims 33-53,55,56,63-71 above, and further in view of Warbasse ('706) and Braun ('362).

The differences between Simpson et al. as modified by Soderberg and claim 58 are a valve cover that is disposed over the valve seat and that comprises: (i) an opening the is disposed directly in the path of fluid flow when the free portion of the flexible flap is lifted from the seal surface during an exhalation; (ii) a fluid impermeable ceiling that increases in height in the direction of the flexible flap from the first end to the second end; and (iii) cross members that are disposed within the opening of the valve cover.

Warbasse teaches a valve cover (11) having a fluid impermeable ceiling that increases in height in the direction of the flexible flap from the first end to the second end for the purposes of protecting the valve flap (12), controlling the extent of movement of the valve flap, controlling the direction of fluid flow exiting the mask via the valve.

It would have been obvious to modify the valve (fig.2) of Simpson et al. to provide a valve cover because it would have provided a means for protecting the valve flap (12), controlling the extent of movement of the valve flap, controlling the direction of fluid flow exiting the mask via the valve as taught by Warbasse.

Braun, in an exhalation valve for a filtering face mask, teaches cross members (25) that are disposed within the opening of the valve cover for the purpose of protecting the valve against debris (col.4, lines 25-26).

It would have been obvious to modify the opening of the valve cover of Simpson et al. as modified by Warbasse to include cross members therein because it would have protected the valve against debris as taught by Braun.

As to claim 59, Warbasse teaches a valve cover (11 of fig.2) having an opening in the valve cover which is approximately parallel to the path traced by the second end of the flexible flap during its opening and closing.

As to claim 60, Simpson et al. as modified by Warbasse (11 of fig.2) teaches a cover and its opening direct exhaled air downwards when the mask is worn by a person.

As to claim 61, the cover of Warbasse (11 of fig.2) illustrates fluid impermeable sidewalls (made of aluminum as disclosed at page 1, lines 70-77).

As to claim 62, the opening in the cover of Simpson et al. as modified by Warbasse (fig.2) is at least the size of the orifice (e.g. 16 of Simpson et al.) in the valve seat.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON J. LEWIS whose telephone number is (571) 272-4795. The examiner can normally be reached on 9:30AM-6:00PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HENRY A. BENNETT can be reached on (571) 272-4791. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AARON J. LEWIS
Primary Examiner
Art Unit 3743

Aaron J. Lewis
June 25, 2006